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ABSTRACT

This document contains a critical analysis of Project Learning Tree (PLT). PLT was developed and distributed in the mid-1970s. It consists of 2 activity guides, one for grades K-6 with 89 activities and another for grades 7-12 with 88 activities. The program also provides free workshops for teachers and others. The analysis of PLT includes the following discussions: (1) introductory material; (2) sponsors of PLT; (3) consequences of over consumption, and the forest products industry's activities to encourage and then meet that demand; (4) Who is PLT/Corporate Propaganda Tree (CPT); (5) Why the forest products industry needs PLT/CPT; (6) Is PLT/CPT successful? (7) Is PLT/CPT environmental education? (8) Evaluation of environmental education materials; (9) Do PLT/CPT activities meet their stated objectives and goals? (10) Is PLT/CPT effective? Contains 85 references. (ZWH)

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Project Learning Tree®

Corporate Propaganda Tree)

a critical analysis by Mike Mayer
The Institute for Earth Education

This critical analysis first appeared as a series in several 1990 and 1991 issues of "Talking Leaves," The Institute for Earth Education's seasonal member's journal.

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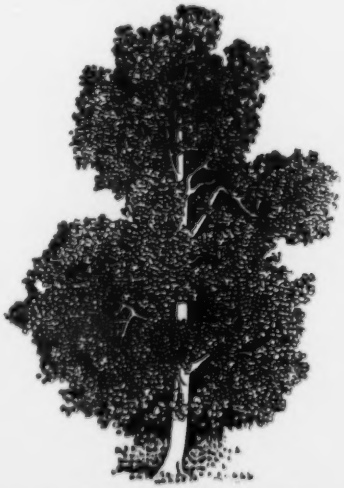
Shams and delusions are esteemed for soundest truths, while reality is fabulous. If men would steadily observe realities only, and not allow themselves to be deluded, life, to compare it with such things as we know, would be like a fairy tale and the Arabian Nights' Entertainments.

Henry David Thoreau
Walden

Ever since I attended my first camp in the summer of 1957 in Kentucky, I have been amazed at the "realities" of the natural world -- the same realities which sparked Thoreau in his solitary retreat. My first summer camp experience hooked me, and for the next 16 years I was either a camper or a staff member at various camps and in a variety of places. I found my heart and soul by the springs emerging from wooded streams near my Kentucky home, in Rocky Mountain meadows beneath snow capped peaks in Colorado, in wild rhododendron groves surrounded by virgin North Carolina forests and in the open Sonoran deserts of Arizona.



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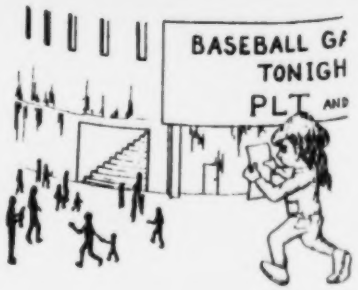
Unfortunately, the "shams and delusions" of nature study at these camps sometimes got in the way of the reality I was seeking. It wasn't until 1972, when I first discovered Steve Van Matre's Acclimatization, that I first seriously considered heading up a nature program. This approach of immersing the participant in the natural communities of life -- Thoreau's realities -- was much more exciting and humane than pithing frogs, collecting leaves, or pinning insects to boxes. One result of this new and exciting approach to the natural world for me was to enroll in a rigorous graduate program with Steve that focused on Environmental Interpretation and Education, where I honed my skills in developing programs and curricula, and gained experience directing activities which provided "magical moments" both in and out of the classroom.



As a classroom teacher and naturalist since 1970, I have continued to search for activities and programs that can help inspire those moments. As an active member of The Institute for Earth Education since 1978, I have even had a hand in creating and piloting materials to broaden the understandings, deepen the feelings and increase the joy in nature experiences. It is from this perspective that I am reviewing Project Learning Tree (PLT) and the role it plays in environmental education.

For those of you unfamiliar with PLT, it was developed and distributed in the mid-1970's and was originally co-sponsored by the American Forest Institute and the Western Regional Environmental Education Council (WREEC). PLT consists of two activity guides, one for grades K-6 with 89 activities and another for grades 7-12 with 88 activities. The vast majority of people who use the guides and have attended PLT's free workshops are school teachers. However, government agency personnel, naturalists, youth leaders, camp staffs, forest association personnel and others in related fields have also been exposed to PLT. Approximately 150,000 people have attended workshops and possibly millions of young people and students may have participated in PLT activities.[25; 26]

Naturally, one objective of this review of PLT is to demonstrate how earth education materials differ from the standard "environmental education" fare. However, there are other reasons for looking closely at PLT and

some questions which should be answered. Who sponsors PLT and why? What educational methods are used to convey its sponsor's environmental messages? Are these methods effective? And finally, do the activities in the materials meet the stated goals? Though I often hear the argument that we must "cooperate" to achieve our goal of a healthy planet, no group, including I-E-E, is beyond a good healthy review. We can all learn from the truth and a dose of constructive criticism.

When I first began this reviewing process, I borrowed a K-6 activity guide from a friend and set out to read it. Afterwards, I believed that all I needed to complete the article was to have a few questions answered by Kathy McGlaughlin, the Executive Director of PLT in Washington, D.C.

Consequently, I finally scheduled a telephone interview with Ms. McGlaughlin in April of 1989. I developed 27 interview questions dealing with PLT's history and background, educational design, and specific PLT activities. I called on the agreed upon date and was told that no interview would be given.

Ms. McGlaughlin stated that after re-reading the "Project WILD/Project TAME" article written by David Siegenthaler for the institute's journal, "Talking Leaves," and reading a satirical review I had written on "Project Barking up the Wrong Tree" for a "shameless" environmentalist colleague of mine, Mark Spreyer, she consulted with her colleagues and concluded that nothing positive could come from an interview. She went on to express the need for all of us in the field of environmental education to cooperate, not to be "negative and destructive."

I must say that I was shocked -- my plans for a simple review crushed by one phone call. Ms. McGlaughlin did agree to send me written information on Project Learning Tree and the American Forest Council, which now manages PLT. From those materials, I was surprised to learn that the American Forest Council is a part of the American Paper Institute and the National Forest Products Association. That link led me to contact several individuals affiliated with the American Forest Council, the National Forest Products Association, the American Paper Institute, the Arizona Tonto National Forest and others. I interviewed people in several states involved with PLT, and a number of Associate members of I-E-E helped me gather local PLT information. Ultimately, my research had to go beyond the two activity guides to focus on the global issues of the forest products industry, the greenhouse effect, deforestation, dioxins, paper production and more. (A bibliography is included at the end of this review.)

The 100+ hours I have put in on research, writing, rewriting, and struggling with the "fine line" between criticizing and critiquing have led me to the following conclusions about PLT:

+ Project Learning Tree is funded by the profits of the forest products industry and is an example of industry publicity/propaganda which tries to justify actions which have a deleterious effect on the Earth and its life.

+ Project Learning Tree has been successful in promoting itself and involving industry, education, and state and federal agencies in its development and operations -- much of this at taxpayer's expense.

+ Project Learning Tree has made an honest attempt at being nonbiased, but it still promotes the idea that the forest's primary purpose is that of a resource for human use, not as a community of life for a variety of plants and animals.

+ Thousands of educators have unwittingly used Project Learning Tree activities under the guise of environmental education and without realizing who had produced the guides or why.

+ Although promoted as environmental education in some of its publicity, Project Learning Tree more closely resembles Outdoor Education and Conservation Education.

+ Finally, PLT has not been effective in stemming the environmental degradation or deforestation of the planet. PLT takes great pride in saying it teaches people how to think, not what to think, yet they don't teach people how to act.

Because of the large impact PLT has had, I was particularly concerned to discover that PLT is more than a simple collection of activities, it is an integral part of the corporate propaganda tree of the forest products industry that promotes causes and gives money to enhance its own image, similar to that of the tobacco and alcohol industries. While the direct impact of this type of propaganda may not appear to be as dramatic as that in the tobacco and alcohol industry with their well-advertised health related problems, the impact is significant. For example, logging on National Forests land can have a serious effect on water quality, especially in the western United States where 75% of all drinkable water flows through USFS land.[55] In addition, pulp and paper mills produce toxins, like dioxins and furans, that contaminate our air and

water, while world wide deforestation is having a devastating effect on air quality in general.[65] In short, I invite you to take a look at just some of the consequences of our over consumption, and the forest products industry's activities to encourage and then meet that demand.

1. Japan, the world's largest consumer of tropical woods, is carefully saving its own native hardwoods while 74,000 acres of tropical forest are cut and/or burned elsewhere each day. (Second place in tropical wood consumption goes to the United States.)[5]

2. Paper products consume 35% of all the trees cut each year, and by the year 2000, it may rise to 50%.[5; 19]

3. The United States, the world's #1 consumer of paper products, kills 1.3 billion trees annually to produce 70 million tons of paper. (As an American, I am responsible for killing 5.2 trees each year to make the 640 lbs. of paper that I will use personally.)[18, p. 2; 19]

4. Since 1965, U.S. paper consumption has doubled; use of recycled paper products has increased by only 7%.[19]

5. Each week, 500,000 trees die to produce the Sunday edition of U.S. newspapers. Only 12% of our newspapers use recycled newsprint. (The New York Times Sunday edition alone destroys 3.9 million trees each year.)[22, p. 31]

6. Each year the U.S. spends $6 billion to dispose of solid wastes. Half of that solid waste is paper. 50% of the paper waste is from wrapping, decorating, and packaging products.[19]

7. The paper industry is the 3rd largest consumer of energy and the greatest consumer of fuel oil in the U.S.[19]

8. Over the past 20 years, 35% of the Congressional budget for the USFS budget has supported logging. Only 2-3% has supported soil and water conservation, recreation, and wildlife.[55]

9. More miles of logging roads were built on USFS land in 1989 than the total of commuter highway miles for the entire country. The USFS has overestimated the amount of old growth forest in Washington, Oregon, and California by 50%, yet allows "harvesting" at twice the current rate of forest growth.[33; 55; 64, p. v-vii]

While many universities and non-profit organizations are questioning and even refusing to accept money from tobacco and alcohol industries, PLT cannot question or refuse the money it receives from the forest products industry because it is totally funded by this industry.[59] Its office space is alongside the American Paper Institute (API) and the National Forest Products Association (NFPA). Its staff is funded through the American Forest Council (AFC) and the American Forest Foundation (AFF), divisions of API and NFPA. Consequently, PLT says it's environmental education while being funded by an industry that proudly proclaims success by the number of "environmental" bills it helps defeat in Congress each year, by the increased number of acres it pressures the Dept. of Agriculture and the USFS to release each year for cutting, and by the number of tree farms which it encourages the development of each year. Project Learning Tree is a wholly owned subsidiary of a Corporate Profit and Propaganda Tree (CPT) and thus should always be written as PLT/CPT to remind us of its base.

Who is PLT/CPT?

Play ball! It's baseball season in the northern hemisphere as I write this, and so it's time to play ball... hard ball. The makeup of PLT/CPT is beautifully analogous to a modern baseball team, complete with owners, business and general managers, team managers, teams, players, scouts, cheerleaders, and, of course, devoted fans. So grab your favorite baseball cap, your wooden Louisville Slugger (or your chain saw), put some money in your pocket for lemonade, sassafras tea, maple candy or wood cookies, and let's head for the stadium.

Owners

People and companies that make money often like to invest not only for profit but for tax advantages. Some use horses, some use racing cars, and others may even use environmental education. In addition to the tax advantages, backing the right cause can bring in a lot of good publicity.

PLT/CPT has two types of "owners," private and public. The private owners include Weyerhaeuser, Mead Corporation, ITT Rayonier, Georgia-Pacific, and hundreds of others who are part of the forest products industry. These private and corporate owners are worth millions of dollars and control 350 million acres of forest land.[15, p. 4] There is only one public owner, the U.S. Department of Agriculture. But this one department,

through its manager, the USFS, controls 137 million acres which are available for timber and pulp. (The U.S. Forest Service is also a National Associate Sponsor of PLT/CPT.)[15, p. 4; 77, p. 8]

Business and General Managers

The two front office "managers" are the American Paper Institute and the National Forest Products Association.

American Paper Institute -- API is the youngest of the two managers, only on the job since 1966. It helps to serve the 6,000 establishments that employ 700,000 people and produce 70 million tons of paper annually in the United States. The 175 "owners" that directly support API produce 90% of the pulp, paper, and paperboard produced in this country. According to their brochure, the "American Paper Institute," each owner contributes money "...based on their net dollar sales of all primary products."[18, p. 2, 4, 27]

This income enables API to provide information to the owners on government laws and regulations, new methods and ideas in the industry, labor relations, consumer demands, and the paper market. Most importantly, API helps protect the interests of the owners by representing them as lobbyists where it counts the most, "...in Congress, in the Executive branch, before the judiciary, in state and local governments, in the national or specialized media, and in the international arena."[18, p. 6]

(Interestingly, API would not reveal the names of the owners or companies that use its services.)

National Forest Products Association -- The function of this "general manager" is aptly described by the title of its own brochure, "National Forest Products Association -- Industry's Advocate in the Nation's Capitol."[23]

Since 1902 its staff of professional lobbyists have worked on government relations "...to ensure that the forest products industry is represented before the Administration, members of Congress and Congressional committee staff..." on issues such as timber supply, dust exposure, taxes, human resources, international trade, the environment, and forest management.[23]

The membership is large and varied and includes such famous owners as Dow Chemical, the Georgia Forestry

Commission, Southern Pacific Transportation, Grand Canyon Forest Industries, Plum Creek Timber Company, and dozens more.

Team Managers

There have been three managers of the PLT/CPT team: the American Forest Institute, the Western Regional Environmental Education Council (WREEC), and the American Forest Council.

American Forest Institute -- Now deceased, this manager helped to form the original PLT/CPT team in the early and mid-1970's. It held the original copyright on PLT/CPT.

WREEC -- This manager is now retired from active PLT/CPT managing, but is still mentioned in the activity guides. Funded by a Department of Education grant of approximately $150,000 in the early 1970's, WREEC's assignment included coordinating and developing environmental education materials in 13 Western states (Alaska, Colorado, California, Hawaii, Idaho, New Mexico, Nevada, Montana, Oregon, Texas, Utah, Wyoming and Washington). Its 26 members included one person from an educational agency and another from a resource management agency in each of these states.

One of four such councils funded throughout the U.S., it is the only one that still exists since the original grant was awarded. The American Forest Institute approached WREEC in the mid-1970's and asked them to get involved in producing educational materials related to forests. According to a former WREEC member, this is apparently what kept WREEC "alive" while other regional organizations disappeared. WREEC currently concentrates its "managing" efforts on Project WILD. It holds the copyright for Project WILD and receives a portion of the "buy-in" fee of $7500 paid by state agencies to become part of the Project WILD team.[32]

American Forest Council -- This manager must take care of a number of teams for the owners and general managers. These teams include Pulpwood Supply, American Tree Farm System/Forest Productivity Programs, American Forest Foundation, and Project Learning Tree. As a trade association, AFC took over the manager's role in 1986 from AFI. It must

answer to both NFPA and API and shares office space with these two general managers in Washington, D.C.

AFC has an annual budget of $2.7 million and employs 40 people.[34] Dues and contributions come through API and NFPA, or can be directly made to AFC. An executive board jointly appointed by API and NFPA governs AFC. Its "owners" include: Boise Cascade, Champion International, Consolidated Paper, Georgia-Pacific, International Paper, Weyerhaeuser, and Willamette Industries.[18, p. 17]

Teams

Now let's take a closer look at two of AFC's major teams, the American Forest Foundation and Project Learning Tree.

American Forest Foundation -- The AFF is administered and managed by the AFC. It is a 501 (3) (c) charitable organization incorporated in 1981. Its function is to help raise funds for the manager, AFC, for special projects that help "...enhance public awareness of land stewardship, forest products and the forest products industry."[17, p. 2]

This team has been a star performer over the past several years in a variety of areas. AFF sells environmentally sensitive land that has been donated by owners like Weyerhaeuser, Georgia-Pacific, and Potlatch Corporation. The money raised from the selling of places such as Bear Valley Eagle Roost in Oregon, King's Lake Bog in Washington, Felsenthal Lands in Arkansas, and the Amargossa River tract in California, are important sources of income for the manager. Approximately $100,000 is provided to help support other teams under American Forest Council management: the American Tree Farm System, the Green America series, and Project Learning Tree.[17, p. 1]

Project Learning Tree -- This team originally went public in 1975-76 when it was managed by the American Forest Institute and WREEC. It is now managed by the AFC, which also holds the copyright and registered trademark of the team. Although the numbers vary depending on whose brochure you read, PLT/CPT currently plays in 48 states, Canada, Sweden, Denmark, Finland, and Honduras.

A Planning and Advisory Council also helps the manager with the team. Two new members have recently been appointed by AFC: a Timberlands

Resource Manager from James River Timber Corp. and an Environmental Education Coordinator from the USFS.[27]

The team carries three full time members, helps coordinate and supply guides and leadership to "scouts" in the various states, and writes a national newsletter called "Branch." Team space is shared with AFF, AFC, API, and NFPA.

PLT/CPT has received a number of awards and recognitions over the years: the National Conservation Education award from the National Wildlife Federation, the Distinguished Service Award from the North American Association for Environmental Education and the Conservation Education Association, the Education Award from the Arbor Day Foundation, the Conservation Award from the California Natural Resources Federation, the Educational Sponsorship Award from the National Association for Industry-Education Cooperation, and recognition from President Reagan as being one of the nation's exceptional volunteer programs.[27]

Players

In a sense the players that make up these teams are the trees and the forest communities that are bought and sold, traded, cut and used up. One minute tall and majestic, and the next minute a log; one day a prized player and the next day cut; one day a home for a variety of creatures and the next day off to 2 X 4 land in an apartment complex; one day waving in the breeze and the next day chewed to a pulp and waving in the hand of a student during math. It is tough being one of these players.

You might recognize some of the players: Douglas Fir, Cascade Redwoods, Ponderosa and Lodgepole Pine, Oak Hickory, Mesquite Bosque, Aspen Birch, Maple Beech, Spruce Fir, and Southern Pine. Sometimes I think these players are just waiting for us to become conscious again and join them in a different game... a game that recognizes their spirit and beauty, not just their dollar value.

Of course there are other members in a professional sports organization, members who must help with promotion and publicity and fill the arenas with fans when the players come to town to play.

Scouts

There is at least one top scout, or coordinator, in each state. The scout can be from a state or federal agency, a department of education or parks and recreation, a state university, or from a forestry association.

They help set up workshops, order materials and recruit and train "cheerleaders" to lead and excite others about PLT/CPT. The main scout in Arizona, where I live, works for the U.S. Soil and Conservation Service and has a co-sponsor who is with the USFS. Time and money are provided for them through their agencies for PLT/CPT.

Other scouts receive money for their work from a variety of sources. In California, the individualized license plates pay for the $85,000 a year spent on PLT/CPT salaries and materials.[37] Some scouts simply have the time available through their jobs and may spend anywhere from 4 to 140 hours each month promoting PLT/CPT through workshops and the training of cheerleaders. Of course, for many of them this is all done while working at their tax supported government jobs.[30; 31; 38; 39]

Cheerleaders

Anyone can become a PLT/CPT workshop leader or "cheerleader" by simply attending a six hour PLT workshop and then completing 8-12 subsequent hours of training. After cheerleaders have assisted a few veteran cheerleaders, they are qualified to schedule and lead their own workshops through the state scout. Many cheerleaders discover that they can promote the forest products industry during work time depending, of course, on the attitude and policies of the agency or school district employing them.

The cheerleaders and scouts recruit fans who would like to come to the stadium and participate in the games, activities and workshops offered for free -- a great promotional device. Of course, these "promotional fans" will not only encourage other fans to get involved, they may actually use the activities to encourage future fans to continue the owner's promotional schemes... all in the name of "environmental education."

Still, promotional fans will only fill a few thousand seats. Paying fans are needed to ensure PLT/CPT's continued success, and that is where

everyone in America gets involved. The paying fans are all of us who pay taxes to federal and state governments. It's that tax money that often pays for the salaries, travel expenses and activity guides for those involved in dispensing PLT/CPT.

Of course the owners, managers, scouts, and cheerleaders may say their materials are free, genuine environmental educators should know that there can be no such thing on the menu. In reality sponsoring agencies at the state and federal level must pay the $3.00 - $6.00 for each activity booklet that promotional fans receive for nothing. (And some workshop leaders admit to charging the participants to cover the costs.) So it is astonishing that our so-called "professional" field has been so unqualified and unstinting in its praise and support for this project.[30; 31; 35; 36; 38; 39]

Whether you like it or not, you and I are supporting PLT/CPT and the forest products industry through our tax dollars. Although many leaders and users of PLT/CPT undoubtedly mean well, and feel they are truly promoting environmental education, I believe the forest products industry is actually using them for promotional purposes as it continues to profit at the expense of the earth and its life.

The PLT/CPT situation gets worse, and I hope you will stay with me because this so-called "review" is in reality an invitation. It is an invitation for all of us as educators to reach for a larger vision of environmental wisdom and caring and dreaming. It's a space not cluttered with supplemental activity collections, but crafted around programs that help create new lifestyles as well as develop understandings and feelings about the earth; a vision that does question where the money and motivation come from when something is offered for "free" and also wonders about the hidden costs of "free." It's a bolder vision where profit and promotion are not the bottom line; a space where less is more and where wise ecological decisions mean healthy personal decisions for humans and all living creatures.

Why the Forest Products Industry Needs PLT/CPT

It should come as no surprise that the forest products industry had neither environmental education nor altruism in mind when PLT/CPT was developed. To be blunt, it appears the forest products industry needed

some good publicity back in the early 70's when the project was developed. And they still do. Their goals then were the goals of much of the corporate world -- profits, power, politics and propaganda. For this reason CPT stands not only for the corporate propaganda tree but for the corporate profit tree.

Sheila Hardy, author of Hucksters in the Classroom and winner of the George Orwell Award in 1980, provided some insights into the events leading up to PLT/CPT being developed. She stated that after several years of sharply rising housing and lumber costs in the late 60's and early 70's, the forest products industry came under close scrutiny by the federal government, and early in the Carter presidency the Justice Department began a criminal investigation of the industry for price fixing. At the same time the industry was pressuring the Department of Agriculture (USDA), which controls the USFS and its 137 million acres of public land, to release an additional 36 million acres of forest for cutting.

In order to bolster its position with one federal agency while being criminally investigated by another agency, the industry encouraged Congress to increase the USDA budget to provide for more "...tree cutting, citing advantages such as 'fire protection.'"[2, p. 71] At the same time a political alliance was formed with the Black Caucus. In exchange for lobbying to support inner-city housing programs, the industry would receive Black Caucus support for increased appropriations through the Agriculture Appropriations Subcommittee.

A red herring was then introduced in the form of "significant" new public service efforts by the industry. A tree farm program was developed for individual and family woodlot owners (now called the American Tree Farm System), and the Department of Housing and Urban Development was given vocal support for urban homesteading. It was within this context that the initial plans for the development of PLT/CPT were revealed.

The American Forest Institute commissioned the Western Regional Environmental Education Council (WREEC), PLT/CPT's co-sponsor, to begin working on a project to help "...students understand their interdependence with the total forest community and... to use these resource lands wisely for the long-term benefit of all."[8, p. 8] Using a combination of educators, forest industry personnel, environmental groups and wildlife managers, project development began in 1973-74 and PLT/CPT was published in 1975. I have no official development costs, but one state coordinator thought $150,000 - $200,000 sounded correct. (Ms.

McGlaughlin, please correct me if these figures are inaccurate.)

In a letter from Thomas Eckman, Project Supervisor of Education/Research Systems, a public relations firm hired by the American Forest Institute during PLT/CPT's development, to Ms. Hardy, he acknowledged the industry's tendency to use classroom materials for promotional advantages. Quoting Mr. Eckman, "...my familiarity with business and industry's typical approach leaves little doubt as to what you'll find."[2, p. 69]

(By the way, President Carter did release the additional 36 million acres of forest for cutting, another home run for industry.)

Riding this wave of new publicity, PLT/CPT workshop attendance increased from 3,169 participants in 1977 to a peak of 12,902 in 1982. From 1983-85, workshop attendance declined. In 1986-87 a new push to publicize and rejuvenate the project began -- and perhaps it is just an interesting coincidence but 1986-89 were also years of record profits, record exports and record numbers of acres leased from the USFS by the forest products industry.[48, p. 920-1; 85, gen. info.]

It is unfortunate that PLT/CPT is caught between having to accept support from their host industry while trying to live up to their own "...award-winning environmental education program" claims.[25; 26; 27] Hopefully it is not the individuals who are uncaring or unethical, but rather, as Charles Malone, of the Nuclear Waste Project Office in Nevada, points out, "...some organizations responsible for performing technological assessments and implementing large projects systematically distort information to meet the needs of the organization."[64, p. 3-4]

I fear that is the position that PLT/CPT finds itself in as environmentalists seek answers to questions such as these:

+ WHY, with 98% of the USFS land available to the forest industry, does it focus on the ancient 2% that represents all of the world's remaining temperate rainforest in the northwestern United States?[44, p. 18-19]

+ WHY does the USFS continue to allow 60,000 acres a year of this

ancient, old-growth forest to be cut in Oregon, Washington and California knowing that at current cutting rates there will be no more of these forests left by the year 2010?[33; 81, p. 7-9]

+ WHY would we, as American taxpayers, allow our government's policy and taxes to be used to encourage the destruction of 300-1000 year old patriarch trees for private profit? (Many have compared this action to Europeans blowing up their castles to build condominiums.)

+ WHY do the national staff, state coordinators and workshop leaders of PLT/CPT remain quiet in the face of blatant distortions, power politics, and the destruction of the world's last temperate rain forest?

Is PLT/CPT Successful?

"There are only people and natural resources." -- Gifford Pinchot, First Director USFS[7, p131]

You bet it is. Echoing the words of Mr. Pinchot and the PLT/CPT brochures, "PLT is People," and lots of them. Since its beginning in 1975, PLT/CPT has measured its success by numbers and its "bottom line" is impressive -- hundreds of workshops and thousands of participants each year. PLT/CPT has also been successful in developing a wide variety of monetary and promotional support from the forest products industry, state forest associations, universities, government agencies and schools.

The managers/administrators of PLT/CPT -- American Forest Foundation (AFF), National Forest Products Association (NFPA), the American Paper Institute (API) and the American Forest Council (AFC) -- also use numbers to measure their success. Their bottom line includes increased corporate memberships, larger industry donations, greater tax dollar support and more environmental bills defeated in the U.S. Congress. Needless to say, the forest products companies' bottom line for 1989 was impressive with $4.6 billion in profits on sales of $88.5 billion.[24; 57, p. 918]

The United States Forest Service must also take some responsibility for the success of PLT/CPT through its three roles within the project: 1) the USFS is a National Association Sponsor of PLT/CPT, 2) their environmental education coordinator is on the Planning and Advisory Council of

the project, and 3) most importantly they influence the industry that supports PLT/CPT by providing a cheap, long-term source of forest products so the price of timber from private sources will remain artificially depressed.[33; 77, p. 8]

Pressure from individual companies and industry representatives is nothing new for this agency. From its inception, under the leadership of Gifford Pinchot, its lands have been managed as natural resources primarily for corporate benefit. This conservation philosophy is what caused John Muir to sever his ties with the national forest system and promote a wilderness policy through a national parks system instead.

Gifford Pinchot's own words best describe how the USFS operates: "The first great fact about conservation is that it stands for development. There has been a fundamental misconception that conservation means nothing but the husbanding of resources for future generations. There could be no more serious mistake.... The first principle of conservation is the use of the natural resources now existing on this continent for the benefit of the people who live here now."[7, p133]

While the USFS has been successful when providing cheap timber, it has not been successful at making money. Over the past decade nearly 2/3 of all timber contracts have lost money and taxpayers have spent between $1-2 billion to support the losses caused by underpricing timber, road building projects on public lands and tax breaks for logging companies.[36; 22, p. 10] This subsidy goes beyond the USA and reaches to Japan, Korea and Taiwan as these countries buy underpriced raw logs and chips from the USA at government subsidized prices which keeps more people in their logging industry employed than in ours. How cheap is this timber? In the Tongass National Forest in Alaska, part of the USA's last rainforest, 500 year old Sitka spruces worth $700 are being sold on long term cutting contracts for as little as $1.48/tree -- that is less than the price of a "Big Mac!"[30, p. 5]

By selling timber to companies below replacement costs, the USFS makes cutting more lucrative than recycling. By cutting the amount of board feet sold from public lands, private timber prices could actually be stimulated and a true market value could be established, thus making recycled products more attractive.[33; 53, p. 4]

The tragedy is we simply do not need to cut our public, USFS managed, forests. The amount of forest products we <u>export</u> each year is roughly equal to what is cut on public lands. In addition, a forest industry study in

1980 indicated domestic demand could be entirely met by private/ industrial forests with a 10% annual return on investment.[53, p. 4]

Just like the rest of the industry, PLT/CPT success is often measured in numbers. According to the brochures, 150,000 people have attended PLT/CPT workshops, affecting between 3 and 7 million others indirectly. (A written request to review how this latter figure was determined received no response from Ms. McGlaughlin, director of the project.)

PLT/CPT has also been successful in arranging for a blend of funding sources: industry profits, donations and tax dollars. The cost for states buying into the project and the price of the guidebooks to most workshop participants (free) has no doubt been a major part of the PLT/CPT success story. (See Table A for a summary of this story in several states.)

All this success has not gone unnoticed. The co-sponsors of the project, AFC and WREEC, have been given awards by the North American Association for Environmental Education, National Wildlife Federation, Arbor Day Foundation, California Natural Resources Federation, National Association for Industry-Education Cooperation, the Conservation Education Association, and by President Reagan for the volunteer aspect of the work.[27]

Table A

PLT Sample State Success Stories

State	Sponsors	Material Costs
CA[37]	Dept. of Forestry & Fire Protection Dept. of Education	$85,000/year includes full-time salary
CT[39]	Dept. of Information & Education	N/A
FL[35]	Cooperative Extension Service, Institute of Food & Agriculture	$5/book
GA[36]	GA Forestry Association GA Forestry Commission	$3/book + shipping
MA[39]	Cooperative Extension Service (University of MA)	$1,250/year
NH[31]	forest related organization	$600/year
NY[39]	Dept. of Environmental Conservation Land & Forest Division	$10,000/year
OR[38]	OR Forestry Educaton Association	$900/year for 300 books
WA[38]	WA Forestry Protection Association	N/A

Coordinator time in PLT	Funding Source	Other
full-time	personalized license plates	considered a priority program; 12 wkshops/year by coordinator; 500 other facilitators
40 hours/month	sponsor, grants, Bureau of Forestry ($20,000)	1989 first year fulltime on PLT & PW 35-40 wkshops/year
15%	Univ of FL (salary), sponsors (materials)	more & more organizations & coorporations helping to pay costs
75% of time coordinates 16 facilitors	Soc. of Am. Forestry, GA Forest Assoc., GA Forestry Comm. Tree Farm Program	co-coordinator paid by GA Forestry Commission Participants cost: $5
80 hours/month 15 wkshops/year	Univ of MA, Participant cost: $5	
1/2 time - 80 hours	sponsors, Science Center of NH (administration)	total budget -- $16,000/year fund raising through associations, no agency money
20 days/month 35 wkshops/year	sponsors	
only PLT staff in OR; 30-40 wkshops/year	sponsor OSU-Sch of Forestry (salary) Participant cost: $20	total budget of $60,000
50% 45-55 wkshops/year	sponsor pays salary; grants	17 certified trainers; $10,000 grant for computer program; $8,000 grant for special education curriculum; $12,000/year budget

At this point in my examination, I also began to take serious note of the subtle discrepancies and hidden messages that seem inherent in the PLT/CPT publicity and in many of the guidebook activities.

For example, does PLT/CPT use the forest as a "...window into the natural world" as it claims? Does it even use a tree? Does it have the learners go outside? A survey of the activities revealed the following:

Grades K-6 Guidebook:[8]	Total Activities	89
	Forest Needed for Activities	6
	Tree Needed for Activities	28
	Indoor Activities	44
	Outdoor Activities*	45
Grades 7-12 Guidebook:[9]	Total Activities	88
	Forest Needed for Activities	1
	Tree Needed for Activities	9
	Indoor Activities	80
	Outdoor Activities*	13

**(If an activity had major components that were both indoors and outdoors, it was counted as both.)*

The most striking information, however, is not what is said but what is not said in these materials. There is no mention of who supports AFC -- industry lobbyists API and NFPA -- and no mention of how tax dollars support the forest products industry and thus PLT/CPT itself. And, of course, no mention of how these groups have influenced the following legislation in recent years:[24, p. 4-6]

+ A 20 year record high in USFS timber sales;

+ Defeated attempts by "environmental groups" to slash various road building projects in national forests;

+ Successfully opposed expanding national parks and preserves in California, Oregon and Texas;

+ Successfully lobbied to allow forest "management" practices to continue on 89 million acres of wetlands and in the Oklahoma Wilderness Bill;

+ Opposed a Congressional measure to "...establish biological diversity as a national conservation goal."

It is regrettable that PLT/CPT has taken on many of the same characteristics of the industry that supports it -- a bottom line mentality, hidden messages, rationalizing or ignoring its means of support, and distorting information for the good of the organization.

Is PLT/CPT Environmental Education?

It has taken me this long to begin the review of the activities and goals of PLT/CPT because I felt it was vital to understand the "On's" of the project as clearly as possible, i.e., the roots of the material and its support base. The "To's," or goals, are what I want to highlight next -- and the fact that PLT/CPT claims to be environmental education.

> **"...if environmental education is to be thorough, it is imperative that schools offer a curriculum which deals with root causes, not simply factual assessment of symptoms, such as water pollution or traffic congestion. Behind the traffic congestion, for example, rests corporate, public and governmental responsibility."**
>
> **-- William B. Stapp & Ellen Vande Visse**[10, p. iv-v]

If you are a user of PLT/CPT and supplement your science, art, math, social studies or other subjects with this project, then you are probably using it in its proper context. If you are trying to use PLT/CPT as a means to teach environmental education, then I would suggest you stop as soon as possible. Though the project does contain some environmental education activities, the overwhelming majority are conservation and outdoor education lessons. In short, PLT/CPT is not environmental education.

To reach this conclusion I evaluated PLT/CPT using three different techniques:

+ Defining outdoor education (OE), conservation education (CE), and environmental education (EE) and applying the definitions to the activities in each section of the guidebooks;

+ Using a comparative tool developed by Steve Van Matre in Earth Education... A New Beginning to determine a numerical score for the PLT/CPT materials;

+ Reviewing the brochures and literature printed by PLT/CPT and the forest products industry that describes the project, then matching those descriptions with the same definitions of OE, CE and EE.

First, I examined all of the activities using the following definitions:

Outdoor Education -- an educational approach to learning that utilizes resources outside the classroom and can be applied to all components and subjects of the curricula -- history, mathematics, science, art, music, etc. Major components include:[12, p. 9-10]

+ curriculum enrichment and application
+ recreation skills and outdoor pursuits
+ socialization experiences[13, p. 25]

Conservation Education -- a course of study that focuses on the characteristics, distribution, uses, importance, problems and policies regarding natural resources, i.e., forests, soils, grasslands, water, minerals, oils, fish, game, etc. and the management of those resources for the common good of all. Major components include:[12, p. 7-9]

+ importance of natural resources to society
+ awareness of natural resource degradation
+ support for natural resource management programs[10, p. viii]

Environmental Education -- an ecocentric educational approach to the natural world that focuses on understanding ecological processes, finite resources, limits of human endeavor, awareness of environmental problems, and responsible lifestyles and personal action. Major components include:[12, p. 13-4; 4, p. 25-9]

+ an understanding of how the ecological systems on earth function
+ an awareness of how our lives are tied to these ecological systems
+ an attempt to craft more harmonious lifestyles to lessen our impact on these ecological systems[13, p. 25]

If an activity took place outdoors and dealt primarily with a standard

school curriculum topic, it was OE. If the activity dealt with natural resources or management issues, it was CE. If the activity dealt with an ecological concept such as energy flow, cycling of matter, plant succession, etc. or an environmental problem e.g. water or air pollution, it was EE. Some activities did not neatly fall into one of the definitions. For instance, activity #29, "Wasted Words" (Guidebook for grades 7-12), focused on how some words evoked an emotional response and the pros and cons of such language and activity #11, "The 'Touch Feely' Box" (Guidebook for grades K-6), did have an outdoor component but the focus was on the sensory experience, not any particular subject matter. Thus an Affective/Sensory category was necessary.

Other activities did not focus on OE, CE, or EE but on a skill. For example, #61, "A Calorie Cost" (Guidebook for grades 7-12), was a math activity in the classroom on the cost/calorie of various foods. Activity #51, "Growth Graph" (Guidebook for grades K-6), simply had students graph plant growth (indoors) and compare the plant and the graph. Once again this had no direct connection to OE, CE, or EE but involved a knowledge based, or cognitive skill. Thus a Cognitive category was also included. The results are summarized in Tables B and C.

As you can see from the Tables, the numbers indicate that there are twice as many OE and CE activities as there are EE activities in the PLT/CPT materials. (The upper grades [7-12] place more emphasis on environmental problems and lifestyle issues than the elementary grades, thus a higher number of EE activities appear there.)

Another measure I used was a comparative tool developed by Steve Van Matre.[13, p. 8-9] It starts by giving 100 points to any materials that claim to be EE. Then up to five points are subtracted depending on the answers to each of fifteen questions. Please be aware that this is a subjective, rather than objective measure, and the resulting score does not mean yes, it is EE or no, it is not EE. Rather the score gives the reader an indication of how the materials compare to other possible EE materials.

Evaluating EE Materials

Score for PLT/CPT[13, p. 8-9]

1. Who paid for the materials or funded the developers, and are their messages hidden in the products? PLT Score: -5

2. Are the leaders encouraged to build complete programs with specific learning outcomes or just to sprinkle around whatever catches their fancy? PLT Score: -5

3. Can the leaders see the big picture they are working on and do they know how to go about fitting all the pieces together? PLT Score: -5

4. Does the introduction include a lot of lofty aspirations and high-sounding objectives, while the materials fall short in achieving those goals? PLT Score: -4

5. Do the learning experiences really address underlying environmental concerns, or are they superficial, external treatments requiring little or no change in their participants? PLT Score: -4

6. Are there specific models and schedules for the leaders to consider in how they will use the materials? PLT Score: -5

7. Do the activities really accomplish what they claim, or does the leader have to talk them into doing their jobs? PLT Score: -4

8. Are the activities tacked on just to get some doing in there somewhere, or are they integral parts of a learning model? PLT Score: -3

9. Do the activities captivate and motivate the learners, or do they involve a lot of tiring and uninspired paperwork assignments? PLT Score: -3

10. Do a lot of activities end up with "discussion" or "follow-up" lists that look good, but for which there is no built-in motivation or mechanism to insure that they are actually carried out? PLT Score: -5

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11. Do the activities deal with basic ecological processes and their meaning in people's lives, or do many of them focus on secondary concepts and concerns? PLT Score: -4

12. When they are participating in the activities, do the learners know where they are going and why? PLT Score: -4

13. After they are finished with the activities, do the learners know what they can do next, and are they encouraged and supported in doing it? PLT Score: -3

14. Are the essential activities mostly classroom-based exercises that require little or no contact with natural places and processes? PLT Score: -5

15. Do the activities fire the learners up about our environmental problems but fail to address how they are part of them? PLT Score: -4

Using this tool PLT/CPT did not fare well:

Beginning points:	100
Subtracted points:	-63
Score	37

Though this is a comparative and subjective score, a student in my class scoring this low would have some special homework assigned, plus a make-up test and perhaps even a note sent off for the parents.

Certain "red flag" words also kept appearing in the PLT/CPT materials that lent support to my conclusion that it is not EE. Words like natural resources, conservation, forest resources, wise use, multiple use, economic trade-offs, harvest, and management are commonplace.

There are some key words missing, too, ones that I would hope to find in an EE project that claims to focus on the forest. Words like community, old-growth, energy flow, cycling of matter, preservation, materialism, changing lifestyles, over consumption and reduce are simply not found, or not in any great abundance.

Two key words in particular that I could only find twice, and one of those times was in the introduction, were "forest community." What I did find

Is PLT Environmental Education?

Table B -- Activities Grades K-8[8]

PLT Principles	# of activities	
Environmental Awareness	17	
Diversity of Forest Roles	17	
Cultural Contexts	9	
Societal Perspectives	6	
Management & Interdependence of Natural Resources	9	
Life Support Systems	24	
Lifestyles	7	
Totals	89	

*Activities in these categories did not directly relate to either OE, CE, or EE objectives.

The numbers below refer to guidebook activity numbers

OE Activities:	1, 10, 14, 15, 16, 21, 26, 27, 28, 34, 36, 50, 52, 54,
CE Activities:	19, 20, 22, 30, 45, 48, 49, 53, 55, 58, 73, 74, 75, 76,
EE Activities:	32, 40, 41, 47, 57, 62, 64, 68, 84, 86, 89
Affective/Sensory Activities:	2, 3, 5, 7, 11, 12, 17, 24, 35, 38, 43, 46, 88
Cognitive Skill Activities:	4, 6, 8, 9, 13, 18, 23, 25, 29, 31, 33, 37, 39, 42, 44,

Is PLT Environmental Education?

Table C -- Activities Grades 7-12[9]

PLT Principles	# of activities	
Environmental Awareness	5	
Diversity of Forest Roles	9	
Cultural Contexts	17	
Societal Perspectives	8	
Management & Interdependence of Natural Resources	14	
Life Support Systems	14	
Lifestyles	21	
Totals	88	

*Activities in these categories did not directly relate to either OE, CE, or EE objectives.

The numbers below refer to guidebook activity numbers

OE Activities:	2, 5, 7, 8, 12, 13, 17, 34, 35, 40, 41, 44, 69, 72, 76,
CE Activities:	3, 9, 11, 15, 16, 18, 19, 20, 21, 23, 24, 28, 31, 32, 3
EE Activities:	4, 6, 10, 14, 22, 33, 45, 46, 49, 50, 51, 52, 60, 62, 6
Affective/Sensory Activities:	1, 25, 26, 27, 29, 30, 56, 78
Cognitive Skill Activities:	38, 54, 61, 85, 86

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OE	CE	EE	Affective/ Sensory*	Cognitive Skill*
5	0	0	7	5
5	4	1	1	6
1	0	2	3	3
0	3	1	1	1
4	3	1	0	1
9	8	3	0	4
1	2	3	1	0
25	20	11	13	20

6, 59, 60, 61, 63, 66, 69, 70, 72, 78, 85
77, 79, 81, 82, 83, 87

1, 65, 67, 71, 80

OE	CE	EE	Affective/ Sensory*	Cognitive Skill*
2	1	1	1	0
4	2	3	0	0
1	10	1	5	0
2	4	1	0	1
3	5	6	0	0
0	4	7	1	2
4	3	11	1	2
16	29	30	8	5

1
, 37, 39, 42, 43, 47, 48, 53, 55, 57, 58, 59, 68, 83, 84
, 64, 65, 66, 67, 70, 71, 73, 74, 75, 77, 79, 80, 82, 87, 88

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was the term "forest resources" used over and over again, implying that the forest is more for mankind than for its own sake. To quote William Hernbrode, former Conservation Education Coordinator for the Arizona Game and Fish Dept., "Forestry literature refers to harvest, fire prevention and perhaps anti-littering, but seldom to the forest as a biome."[3, p. 418]

Perhaps I'm wrong, but my hunch is that the forest products industry wants us to think of forests as resources not communities in order to encourage consumption at current rates so profits can remain high and costs can remain low. Our booming demand for paper is not being met by recycled products but by forests. Can you imagine if the farmers in this country asked us to put stickers on our refrigerators saying, "Eat More and Get Fat -- It's Good for America," so they could remain in business?

In the past decade the forest products industry has benefitted from 35% of the budget given to the USFS by Congress. Meanwhile only 2-3% of the USFS budget has gone for soil and water conservation, wildlife, education and recreation. The industry wants to continue to receive this subsidy and they want us to continue to use more, not less, of their products. PLT/CPT and the other industry sponsored EE projects are geared for the status quo.[35]

I know the standard industry response: "We are just meeting the demands of the marketplace. We are giving people what they want." And that may be true, but how about doing it without the government subsidy so less intrusive products have a fair chance in the marketplace? My apologies if I have slipped into a diatribe again, but it is just hard for me to believe that the forest products industry has the earth and EE as a top priority.

Here's how PLT/CPT is seen through the eyes of its promoters:

> "...Project Learning Tree® prepares young people to make decisions about these critical resource issues [federal policy issues] based on fact, not emotion." -- American Paper Institute[18, p. 17]
>
> "...Project Learning Tree, an environmental education program which gives tomorrow's voters an understanding of forest management principles." -- National Forest Products Association[23]
>
> "PLT helps prepare young people to make wise decisions about conservation practices and resource use." -- PLT Brochure[25]

PLT/CPT simply does not grapple with the underlying environmental problems William Stapp and Ellen Vande Visse so ably described at the beginning of this section. PLT/CPT acknowledges environmental problems but presents activities from a mankind centered perspective, which perpetuates the cornucopia mentality of our society. It continues to promote the idea that technological breakthroughs and wise use of resources will allow us to go on our merry consumptive way. Indeed, "we" may find solutions to some environmental problems, but nowhere does PLT/CPT admit that "we" are the problem or present ways "we" can be less so.

I will be the first to admit PLT/CPT's success, and to acknowledge that the forest products industry has improved its technology to utilize every scrap of forest it harvests, but that does not make PLT/CPT environmental education. That is not my definition of EE, nor is it Noel McInnis' in his article, *"What Makes Environment Educational?"*, "The ultimate outcome of environmental education must be a widespread understanding of the limits of human endeavor, sufficient to overcome the presently prevailing illusions of technological omnipotence."[4, p. 28]

And finally, let me extend an invitation (once again), to the PLT/CPT sponsors, administrators and users to take that first step towards a wider vision where they can ask, "If this project is concerned about the earth and its forests, and wants to promote good decision-making skills, why not decide, as the first step, to print the guidebooks and promotional brochures on recycled paper?"

Do PLT/CPT Activities Meet Their Stated Objectives and Goals?

I wish this question could be answered with a simple "yes" or "no" statement, but it can't be. PLT/CPT looks awfully good on paper. All the right ingredients are there -- goals, principles, objectives, concepts, subject matter. The format appears to be well organized and a quick glance would lead most teachers to sing its praises on lesson plan day. And of course the topic is "hot" in the decade of the 90's -- the environment.

However, even a cursory examination behind this facade will reveal activities that do not meet their immediate objectives and/or long term goals, information of questionable value, and subtle messages incorporated to support the status quo of consumptive lifestyles and the corporatization of our societies.

PLT/CPT Guidebooks and activities try to cover too much information. There are 177 activities, 169 defined words, 136 "concepts," 103 Topics (91 just in the K-6 Guidebook), 12 grades, 7 principles, and 6 intellectual and valuing skills presented. To the average leader or educator that is simply information overload, which is probably why most people using PLT/CPT focus on a few activity pages only.[8: 9]

As a reviewer it was more material than I wished to deal with and certainly prevented me from detailing every nuance of every activity. However, there are some disturbing patterns that appear throughout these guidebooks, patterns that are the result of sloppy development, poor oversight, or a desire to be everything to everyone, and in the process becoming not much of anything at all.

How to proceed? First, there will be a look at the PLT/CPT format and accompanying jargon. Next, I will include a close examination of several of the activities to see if they do the job of meeting the objectives and principles presented. Finally, this section will end with some general tendencies and patterns that the PLT/CPT Guidebooks exhibit.

Format and Jargon

A typical activity page is set up in the following order:

TITLE	ACTIVITY #
OBJECTIVE: a specific outcome of the activity	SUBJECT(S): Science, Math, etc.
ACTIVITY: procedural description and other information	GRADES: K-7, 7-12, K-3, 11-12, etc.
-- in some, but not all cases...	PLT PRINCIPLES
VARIATIONS: an alternative activity	CONCEPTS
EXTENSION: how to add more depth or breadth to the activity	SKILLS

The majority of the activities are one page long but many are two pages and a few are three or more. This format, in my opinion, is well organized for supplemental material. The Guidebooks are three-hole punched and the pages are easily removed.

Members of the PLT/CPT team are given these books to help "...students understand their interdependence with the total forest community and develop the knowledge, skills and commitment all citizens need if society is to use these resource lands wisely for the long-term benefit of all."[8, p. v] (Ignore for the moment the overweening anthropocentric nature of that, since this statement is already in trouble because as mentioned earlier only 7 of the activities require a forest and only 37 even use a tree!)

All the activities are listed under one of seven PLT/CPT Principles... and it is here that the unusual jargon begins. And what do you think a principle is? Hold on to that because here is the PLT/CPT definition of principle:

"...a statement of the long-range goal of the activity."[8, p. ix]

Not exactly what I had in mind, so I decided to check Webster's Unabridged. It included "a fundamental truth upon which others are based; the ultimate source; the law of nature by which a thing operates; an essential element that produces a specific effect; etc." The long range goals of activities were not mentioned anywhere.

Principles

(The numbers following the Principle explanations below refer to how many activities can be found for each in the K-6 or 7-12 Guidebooks. Throughout this review the numbers in italics will refer to the activities for the older, upper level students.)[8, p. viii]

Environmental Awareness -- "...simple experiences in sharpening senses and appreciating nature." (17/5) I have to admit, the term "environmental awareness" conjured up a different image for me. A more appropriate name for this section might be sensory awareness and nature appreciation... although the 7-12 Guidebook didn't include any sharpening senses activities.

Diversity of Forest Roles -- "...development of an awareness of the importance of forest resources in the many ways they relate to the environmental, economic, and sociological health of the region... the country... and the planet." (17/9)

Cultural Contexts -- "...understanding of the impact of our forest environment in shaping political, economic and sociological events of the past, present, and future." (9/17)

Societal Perspectives on Issues -- "...viewpoints from which various interest groups judge contemporary forest and environmental issues... also refers to the communication processes by which these issues are resolved, and ways in which the outcomes may be influenced." (6/8)

Management and Interdependence of Natural Resources -- "...development of knowledge and skills for the intelligent prediction and evaluation of the impact of specific management policies on the forest and its interrelated communities." (9/14)

Life Support Systems -- "...emphasizes the interwoven nature of the life support systems of our planet, with a close look at the short-term and, more importantly, long-range effects of manipulating various segments of these systems." (24/14)

Lifestyles -- "Having acquired the understanding, knowledge, and skills reflected in the first six principles, each of us can choose to evaluate and modify our own lifestyles." (7/21)

Subject Area

Each activity listed under each category is given a suggested subject. These are the standard educational areas of Science, Social Studies, Fine Arts, Language Arts and Humanities, Mathematics, etc. Unfortunately, there are some inconsistencies in how the subject areas are listed. For instance, in activity #5, "A Cassette Tour of Neighborhood Trees," Grades 7-12, the listed subjects are Language Arts and Humanities, Home Economics and Science. For the life of me, I could not figure out how Home Economics was a subject area for this activity.

A comparison between the subjects listed in activities #59 and #29 in the K-6 Guidebook points out another frequent inconsistency. In "Colors of Nature" (#29) students make a drawing of their adopted tree using colors from natural things. Fine Arts and Science are the subjects listed. Then in "Bursting Buds" (#59), students count buds and leaves on

branches and draw pictures of the branches showing their leaves and buds back in the classroom. Science and Mathematics are listed as subjects this time, but not Fine Arts. Perhaps to get around such inconsistencies the definition in the Guidebook states, "...this designation is offered only to assist educators in finding activities.... It is not meant to suggest that an activity is appropriate solely in the subject area designated."[8, p. ix]

Grade Level

Not much to misunderstand with this one. Usually a range of grades is given: K-3, 7-9, K-6, etc. The Guidebooks explain this is only an "approximation of maturity level" and activities can be adapted for higher or lower grades. Chart D gives a breakdown of the activities by grades.[8, p. ix]

I simply could not figure out what criteria was used to make one activity appropriate for K-6 and another for 5-6. Is it really possible to adapt an activity, and still maintain its outcome for such a wide age span? I have my doubts, and as we get into specific activities please be aware of that caution.

Concepts

Now we are back to some serious jargon. A PLT/CPT team member must learn that concepts "...are more detailed statements of the main ideas underlying the PLT Principles...."[8, p. ix] (Remember the PLT Principles are actually the long-range goals of the activities.) "Concepts" are also listed by number for easy reference and are directly related to a PLT/CPT Principle. "Concepts" related to Environmental Awareness are listed under 1.0 through 1.13. "Concepts" under the second PLT/CPT Principle, Diversity of Forest Roles, are listed under 2.0 through 2.13, and so on for all seven Principles. There are 136 "concepts" listed.

I always considered concepts abstract ideas -- energy flow, time, love, etc. Developing activities that bring these abstractions, these concepts, into the concrete has been one of our primary goals in earth education for years. Once again, consulting my Webster's Dictionary, the word concept is defined as, "...an idea, especially a generalized idea, of a class of objects; a thought; a general notion."

Let's look at a few PLT/CPT "concepts":

2.11 -- "Almost all people in their daily life rely on a significant number of forest-generated products." (No argument from me on this one, but it seems to be an assumption, not a concept.)[8, p. 160]

4.47 -- "People use planning and zoning methods to define and adjust land use because some land or human uses exclude others while some can coexist." (Is this a concept? Or is it an explanation of why we have planning and zoning boards?)[8, P. 164]

Table D -- Summary of PLT Activities by Grade

K-6 Guidebook	K-6	K-4	K-3	3-5	3-6	4-6	5-6
Total	27*	5	8	2	4	23	20
7-12 Guidebook	7-9	7-12	9-12	10-12	11-12		
Total	17**	53	10	5	3		

* one activity listed as K-9 ** one activity listed as 7-10

6.5 -- "Pollutants and contaminants are produced by natural and human-made processes." (Once again, a statement of fact, not a concept. Note, however, the subtle message inherent in this statement, i.e., that natural and man-made "contaminants" have equal weight.)[8, P. 166]

Yes, there were some actual concepts listed -- 1.12 on beauty and quiet, 4.14. on ideas, 5.1 on interdependence, 6.1 on biological systems, 6.112 on the sun as the ultimate source of energy, 6.22 on change, 6.221 on succession, 6.3 on interdependence, and 6.421 on limiting factors -- but the other 127 "concepts" appear to be known facts, assumptions or explanations.

To add to this confusion, the "concepts" are listed in the back of the books under "Curriculum Framework," and no working definition is given for this.

Skills

"These are the intellectual processes which the activity attempts to develop and/or refine." They include acquisition and/or verification of information, communication, effective social (group) participation, critical thinking, creative problem solving, and valuing.[8, p. ix]

These are definitely intellectual processes and I'm glad this term was defined. However, both Webster and I seem to have the idea that skill has more to do with an action of the hands or body, or a proficiency in a particular matter. These "skills" are listed after the "concepts" as "Intel-

lectual and Valuing Skills."

Objective

"This is a statement of the specific learning outcome to be anticipated through use of the activity."[8, p. ix]

Activity

"This is an explanation of the instructional procedure."[8, p. ix]

Variation

"This is an alternative activity, offered as another means to accomplish the stated objective." Variations occur in 55 of the 177 activities.[8, p. ix]

Extension

"These are suggestions for additional projects, based upon the activity and designed... for more depth and breadth." Extensions occur in 74 of the 177 activities.[8, p. ix]

Table E -- Summary of Major PLT Concepts in 177 Activities

	Guidebook	Total	Total
Energy Flow	K-6	1	32
	7-12	4	62, 66, 71, 79
Cycles	K-6	1	23
	7-12	1	64
Ecological Interrelationships	K-6	7	47, 54, 62, 65, 68, 73, 76
	7-12	4	10, 41, 54, 60
Change	K-6	5	40, 48, 51, 62, 85
	7-12	5	54, 57, 63, 67, 71
Other Concepts or Environmental Issues	K-6	16	50, 56, 57, 58, 64, 69, 71, 72, 73, 74, 75, 78, 80, 81, 87, 89
	7-12	26	3, 4, 6, 7, 8, 9, 10, 11, 33, 39, 40, 42, 46, 52, 55, 56, 57, 58, 59, 63, 65, 66, 74, 81, 85, 88
Social Interrelationships	K-6	7	2, 3, 21, 45, 46, 83, 88
	7-12	30	5, 13, 14, 17, 22, 24, 26, 27, 29, 30, 32, 33, 34, 35, 36, 37, 43, 45, 48, 50, 51, 53, 72, 75, 79, 80, 81, 82, 83, 87

Activities

Let's say you are now part of the PLT/CPT team -- you've attended a workshop, you have your Guidebook, and you are out in the field ready for an activity. Will all the activities under a particular heading be equally as effective? Unfortunately, no. I discovered ten different categories or sub-categories of activities when I applied the following criteria:

+ Do the activities meet the stated objective?

+ Are the activities directly related to the primary PLT/CPT Principle (the long-range goal) they are listed under?

+ Is the objective met by the activity or through manipulative discussion and questioning strategies?

+ Does the variation or extension do a better job of meeting the objective than the actual activity?

Except in specific instances, I have limited my review to the activity itself, not to the variation and/or extension. And the activities that represent the major categories will be reviewed in greater detail than any sub-category. Other activities that exhibit the same characteristics (and problems) as the one reviewed will be listed by number for the K-6 Guidebook and 7-12 Guidebook. (Once again, the latter is always in italics.)

I. The Short-Term or Activity Objective is Met, But Not the Long-Term Principle

These "plays" and activities simply did not relate to the primary PLT/CPT Principle they were listed under. This category, and its sub-categories, contains the greatest number of activities.

#29 "Wasted Words" -- Cultural Context Principle -- 7-12 Guidebook; Subjects -- Language Arts and Humanities, Journalism, Social Studies; Grades -- 7-12; Skill -- Communication.

Objective: "Students will be able to describe the advantages and disadvantages of using emotionally-loaded language when attempting to communicate effectively."[9, p. 54]

This activity has to do with semantics. The students are to find an article about a "forest-related environmental issue" and find words, such as "ravaged" and "plundered," that are highly emotional. A list of the words

is made and then the students define the words "both denotatively and connotatively as used in the articles." The class can then discuss if the definitions clarify the message of the article, which definition conveys the writer's message, do the emotions obscure the issue, the role of accuracy, and other topics. Finally, the students will examine the advantages and disadvantages of "using emotionally loaded language" to communicate effectively.

The "variations and extensions" are a continuation of the activity with one examining words in film, another asking students to write an editorial with and without emotionally loaded words, and a third defining pairs of words as they relate to natural resources and the environment.

Along with the primary PLT/CPT Principle, Cultural Context, a secondary Principle, Societal Perspectives on Issues, is also offered. Four "concepts" related to the Principles are presented:[8, p. 163]

3.42 -- "The ability of the individual to perceive forest-societal relationships increases awareness of and contributes to the development of an environmental perspective."

3.421 -- "A person's perception of the environment is largely conditioned by the culture in which the person is raised. The language, literature, and art embodied in that culture contribute significantly to that perception."

4.12 -- "People vary widely in their perception of the forest environment; consequently language and other media used to influence them must be based on knowledge of their values and interests."

4.13 -- "Words and phrases relative to forest/environmental issues carry connotative and emotional impact as well as denotative value and must be used and understood in light of this fact."

One brief comment about these "concepts," obviously they deal more with social interaction and language than with environmental education. And once again, are these really concepts, or statements of fact and assumption?

This activity does help the students recognize "emotionally-loaded language" and does involve them in describing the advantages and disadvantages of such language. Does all of this relate to the PLT/CPT Principle? Not quite. The activity simply did not develop an "understanding of the impact of our forest environment in shaping political, eco-

nomic and sociological events of the past, present and future."[8, p. viii]

The activity was designed to look for emotionally-loaded words and any issue of the day could be substituted (abortion, acid rain, immigration). There is nothing specific in this activity that would do the job of the principle for which it is referenced (although it's obvious why the forest products industries would want students to be cautious, even suspicious, about the use of emotional language).

Total activities in this category: 27/22
(K-6): 6, 10, 13, 15, 18, 25, 27, 29, 30, 31, 33, 35, 37, 40, 44, 51, 54, 55, 60, 63, 71, 75, 80, 83, 86, 87, 89.
(7-12): 1, 2, 3, 14, 15, 25, 28, 29, 30, 31, 34, 35, 40, 41, 44, 51, 54, 56, 57, 61, 65, 73.

I. a. Manipulative Discussion Afterwards, Not the Activity, Meets the Objective

This sub-category does not meet the long-term Principle and only meets the activity objectives through manipulative discussion.

#48 "Changing Land Values" -- Societal Perspectives on Issues Principle; K-6 Guidebook; Subjects -- Social Studies, Language Arts and Humanities; Grades 5-6; Skills -- Gaining Information, Valuing.

Objective: "Students will be able to describe some of the changes in land use in their community."[8, p. 79]

The students conduct a community land use survey to determine how much land is devoted to parks, roads, buildings, etc. Information is gathered using maps, interviews and/or walking surveys. To meet the objective the leader asks the students "...to discuss how these uses appear to have changed or be changing the community." The changes are discussed from various points of view -- as a merchant, lumberman, child and other perspectives.

The variation includes a visit to a local museum or historical society to view old pictures of the community, then a visit to the same areas now to note the changes. For the extension the students draw an ideal playground, compare the drawings with classmates, resolve differences and "talk about" how the plans might become a reality.

There is a secondary principle, Management and Interdependence of

Natural Resources. The three "concepts" supposedly covered are:[8, p. 164-5]

4.4 -- "Forest land is used in different ways depending upon its biophysical characteristics, the needs and desires of society, and the preferences of its present owners."

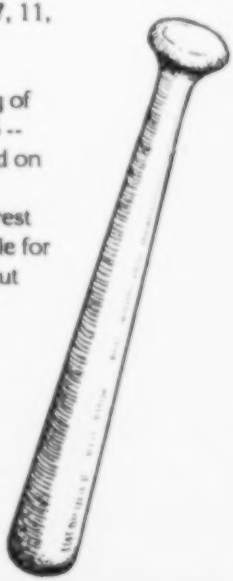
4.46 -- "Conflicts sometimes emerge between private land-use rights and the maintenance of environmental quality for the general public."

5.4 -- "Some forest 'values' can coexist with some forest 'uses' while others are not compatible either temporarily and/or spatially."

Two of the three "concepts" include the word forest, yet a forest is not mentioned nor is it an integral part of this activity. In fact, the discussion is the only part of the activity that matches up with the objective. The activity does not focus on the way various interest groups view forest and environmental issues, nor does it focus on conflict resolution -- the major components of the PLT/CPT Principle it is listed under. It is my opinion that the Variation is actually a better method for meeting the Objective in this activity.

(Please note that I did not form a separate category for activities where variations did a better job of meeting the objective than the written activity because only eight activities -- 7, 11, 15, 32, 48/*42*, *56*, *59* -- met this criteria.)

Before we go on, take another look at the wording of some of the "concepts" above -- like 4.4 and 4.46 -- they seem to imply that our forest industry is based on private land, but that's only partially true. Private individuals own more than 282 million acres of forest and the government has 137 million acres available for the timber industry to lease. We're not talking about private owner rights, but our own as citizens.[15, p. 4]



Total Activities in this Sub-Category: 12/7
(K-6): 4, 9, 34,, 41, 47, 48, 49, 58, 67, 72, 74, 77
(7-12): 4, 10, 19, 27, 43, 46, 68

41

I.b. A Specific Question, Not the Activity, Meets the Objective and the Principle is Not Met

#21 "Interview a Board Worker" -- Diversity of Forest Roles Principle -- K-6 Guidebook; Subjects -- Social Studies, Language Arts and Humanities; Grades -- K-6; Skills -- Communication.

Objective: "Students will improve their interviewing skills through questioning lumberyard workers and be able to state the importance of the lumberyard to the local economy."[8, p. 34]

It's really quite simple: find a lumberyard, develop a set of questions to ask the workers before you go there, then talk to the workers when you arrive. The Guidebook lists ten sample questions but more can be added. Their questions include, "Do you cut the trees into boards at the lumberyard?" "How far are the logs (or lumber) hauled?" "How has the price changed over the past few years?" One of the questions simply restates the objective, and thus when it is answered the objective is met: "How important would you say this lumberyard is to the local economy?"[8, p. 34]

As you might have suspected, once back in the classroom the recorded answers are used for a group discussion.

Total Activities in this Sub-Category: 14/6
(K-6): 21, 32, 36, 38, 42, 44, 49, 53, 61, 62, 64, 69, 70, 79
(7-12): 17, 24, 33, 45, 48, 50

II. The Larger Principle is Met, But Not the Immediate Activity Objective

This category is the flip side of the previous one. The Principle, or long-range goal relates to the activity, but the activity does not meet its own objective.

#5 "A Cassette Tour of Neighborhood Trees" -- Environmental Awareness Principle -- 7-12 Guidebook; Subjects -- Language Arts and Humanities, Home Economics, Science; Grades -- 7-12; Skills -- Gaining Information, Communication, Social Participation.

Objective: "Students will demonstrate their understanding of values of trees by identifying those values for younger students."[9, p. 11]

Scripts are to be written then tape recorded for younger students to use

on a tour of neighborhood trees. There is no doubt this activity relates to the PLT/CPT Principle of Environmental Awareness -- at least the part about appreciating nature -- but the actual objective of demonstrating an understanding of the value of trees is not met.

The information to be included in the scripts is generated during a brainstorming session with other students. (Nothing against brainstorming, but who is the class expert on the value of trees? And what if there isn't one?) In fact, most of the information listed in the activity has little to do with value -- the location of the tree, when it was planted, if it was planted, growing cycle, general health, who cares for the tree, its interrelationships with other organisms, and, oh yes, the value of trees of this type, including commercial, aesthetic, habitat and other values.

A great deal of the write-up focuses on safety and the attention span, or lack of it, in younger children, suggestions on how to make the tours interesting, how the tours might be of interest to the general community, and how the tours could be used for fund-raising.

To reiterate, the activity does develop an appreciation for nature as stated in the Principle, but it does not meet the activity objective -- identifying the value of trees. The underlying focus of this activity is writing a script and giving a tour. The real danger in this activity is the model the students might use -- previous nature walks they have encountered at parks and nature centers. The end result could be slow death by boredom for the younger students.

Along with the primary PLT/CPT Principle there are three secondary "concepts" presented in the activity -- Diversity of Forest Roles, Cultural Contexts, and Life Support Systems. The "concepts" are:[8, p. 160-1, 163, 166]

1.1 -- "The maintenance of a varied and beautiful life-support system is essential to both physiological and psychological health."

2.12 -- "Everyone, in daily life, must rely upon the influence of the forest on the overall community -- including both its physical and cultural environment."

3.42 -- "The ability of the individual to perceive forest-societal relationships increases awareness of and contributes to the development of an environmental perspective."

6.23 -- "Humankind had been an important factor affecting plant and

animal succession and environmental processes."

6.4 -- "All living things have certain basic needs, such as air, water, food, shelter, and a suitable climate."

6.41 -- "All living things depend on their environment to meet their basic needs."

The PLT/CPT Principle, Environmental Awareness, and the activity do not really deal with the issues in the first "concept."

"Concept" 2.12 talks about the influence of the forest, yet the activity does not require a forest or even mention the word forest in the text. (Only 1 activity in the 7-12 Guidebook needs a forest; this is one of the 9 that does require a tree.)

In 3.42 there is not a forest-societal relationship being established, but a tree-individual relationship. I would hope this relationship would bring about greater individual awareness. I have no idea what is meant by an environmental perspective.

There are three "concepts" from the Life-Support Systems Principle, so why isn't this activity listed under that section? In 6.23 the word "important" puts the human influence on nature in a positive light. My preference would have been: "Humankind has had a devastating effect on plant and animal succession..." (Half of the earth's trees have been lost since 1950 and the latest estimates say one species of life a day is disappearing from the earth.) Succession is also not a focus of this activity.[6, p. 11; 13, p. 90]

Both 6.4 and 6.41 focus on basic needs of life. Sure, one of the tours may decide to focus on that aspect, but how can the leader be sure that will happen? And once again, the main focus of the activity is writing a script, making a tape, and sharing that with younger children. Why confuse the issue? Why try to make the activity do something it can't?

True, many of these "concepts" sound pretty good. It's just too bad that the activities apparently weren't created to accomplish them. In fact, chances are good that the activities were created first and somebody tried to match them up with the "concepts" later.

Total Activities in this Category: 10/5
(K-6): 3, 7, 11, 19, 20, 21, 28, 32, 46, 81 *(7-12): 5, 32, 37, 63, 64,*

III. The Activity Meets the Objective and Relates to the Principle

I am afraid this is as good as it gets for the PLT/CPT team. These activities appear to do what they are intended to do and they meet the guidelines for the PLT/CPT principle they are listed under.

#88 "A Look at Lifestyles" -- Lifestyles Principle; 7-12 Guidebook; Subject -- Social Studies; Grades -- 7-12; Skills -- Valuing and Problem Solving.

Objective: "Students will be able to identify some of their own uses of renewable and nonrenewable resources, suggesting ways they might appropriately change their own lifestyles to more effectively make use of natural resources."[9, p. 184]

It's too bad this is the last activity in the 7-12 Guidebook because in some ways it is a pretty good activity. Students list all the renewable and nonrenewable resources they used in the past 24 hours and categorize them by: 1) essential for survival, 2) necessary for present lifestyle, or 3) a luxury. After a discussion of the items the students try to find ways to eliminate or replace items in categories 2 and 3. A master list of all resources is made and a list of alternatives is also posted.

A series of questions for discussion are then presented, i.e., "Which, if any, items listed in the 'essential' category aren't really essential?" "What luxury items could you give up?" "What environmental and economic impact would there be by switching to a different product?" etc.[9, p. 184]

What gives this one some power is when it asks the students to rank the products from the easiest to the hardest to give up, and then encourages them to make a commitment to do so for a day, week or month. It also encourages students to find ways to reuse and recycle items not eliminated, and examine how their lifestyle choices can have a personal, local and global impact.

The primary PLT/CPT Principle is Lifestyles and the secondary Principle is Management and Interdependence of Natural Resources. The activity is expected to teach the following "concepts".[8, p. 164, 167]

7.1221 -- "Choices between needs (essentials) and wants or desires (nonessentials) may come into conflict more frequently as humankind's population and consumption levels rise within finite resource limits."

7.3 -- "Resource depletion and environmental degradation can be slowed by the development and adoption of alternative lifestyles and social expectations."

5.12 -- "The renewable resource base can be extended by research and development, improved conservation practices and management."
5.121 -- "The increasingly efficient use of some resources is a result of technical and marketing improvement and changes in consumer-use patterns."

Overall this activity does what it says it will do -- it meets the stated objective and the PLT/CPT Principle. And it is one of the few PLT/CPT activities, even within the Lifestyles section, that asks students to actually make a change in their lifestyle.

"Concepts" 7.1221 and 7.3 are pertinent, but 5.12 and 5.121 do not have a good connection to the activity (maybe fortunately so). This is typical of many of the PLT/CPT activities. "Concept" 5.12 also delivers a very subtle message to those who read it closely. By listing "research and development" before "conservation practices," it implies that you and I can continue to act as if we can have our cake and jump on it too (perhaps suggesting that we can afford to wait for industry to find solutions). Besides, management of resources seldom tries to slow or eliminate consumptive behavior, it is primarily a method for providing a consistent supply of consumables.

"Concept" 5.121, in my opinion, only tells half the story. It is the profit motive that drives efficiency and motivates companies to find new technologies and marketing techniques.

Total Activities in this Category: 18/*21*
(K-6): 1, 2, 5, 8, 12, 14, 17, 22, 24, 39, 43, 50, 57, 65, 76, 82, 84, 88
(7-12): 7, 8, 9, 11, 12, 13, 16, 22, 36, 38, 39, 51, 55, 57, 60, 62, 69, 78, 82, 85, 88

III.a. Discussion Dependent Lessons

The activities in this sub-category seem to meet the objective and the PLT/CPT Principle goal, but mainly it is manipulated discussion or a direct question, not the activity, that makes them successful.

#45 "My Use or Your Use or Our Use" -- Societal Perspectives on Issues

Principle; K-6 Guidebook; Subject -- Social Studies; Grades -- 5-6; Skills -- Problem Solving, Critical Thinking, Social Participation.

Objective: "Students will be able to describe the implications of using a plot of land for a specific purpose."[8, p. 75]

Students become representatives for one of 15 (or more) groups, i.e., realtor, contractor, tree farmer, cattle rancher, homeowner, conservation group, government representative, etc., trying to persuade a "city council" to sell them a piece of land acquired through delinquent property taxes.

After some research and submitting a written report, each group makes an oral presentation to the council outlining the price they would be willing to pay to acquire the land, the long-range effects on the land's productivity, and the short- and long-term economic advantage to the community.

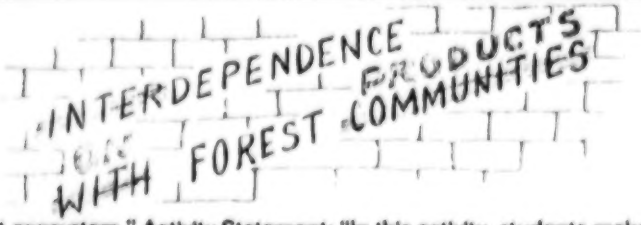
Finally, to insure the objective is met, "A general discussion by all class members should then be held to consider the implications of such a decision, and possible implications of those actions not taken."[8, p. 76] This restatement of the original objective in a discussion format is another common technique used in the PLT/CPT Guidebooks. This discussion technique often alerts one to the fact that the activity is not doing the job it was designed to do. Some other thoughts on this activity: The position statements presented to the "city council" encourage students to emphasize the economic benefits of land. Of the 15 possible buyers listed in the activity, 14 were concerned with development and making money. Once again, this reveals the anthropocentric nature of the PLT/CPT activities and the managers and owners of the project.

Total in this Sub-Category: 4/11
(K-6): 48, 61, 68, 79
(7-12): 6, 18, 21, 48, 66, 70, 72, 76, 77, 79, 81

IV. The Activity Goal Actually Differs From Stated Objective

Talk about double messages! Most of the activities with this problem are in the 7-12 Guidebook, but two (#31 and #81) were in the elementary collection.

#31 Objective: "Students will become familiar with the components of a



forest ecosystem." Activity Statement: "In this activity, students make a deck of cards and then play a game with them."[8, p. 48]

#81 Objective: "Students will be able to describe some effects of animal, chemical, and/or mineral concentrations on plant growth." Activity Statement: "This activity examines the needs of plants for nutrients."[8, p. 136]

The 7-12 Guidebook presents double messages in the following activities: *20, 32, 33, 38, 42, 51, 57, 67, 75.*

#75 Objective: "Students will be able to describe ways in which consumer decisions have far-reaching economic, social, and environmental implications." Activity Statement: "This activity examines the trade-off, economic and environmental, involved in the consumption of resources through packaging practices."[9, p. 151]

#57 Objective: "Students will be able to identify characteristics of climax plant communities." Activity Statement: "This activity is designed to enable students to identify characteristics of climax vegetative types, and to consider the implications of management practices related to such vegetative types."[9, p. 121]

#42 Objective: "Students will be able to describe the effects of overcrowding on plant growth." Activity Statement: "These experiments are designed to help students understand how competition for available nutrients influences plant growth."[9, p. 87]

V. Neither the Principle Goal nor the Activity Objective are Met

#56 "Sap + Energy = Syrup" -- Management and Interdependence of Natural Resources Principle; K-6 Guidebook; Subjects -- Science, Social Studies, Mathematics, Home Economics; Grades -- 4-6; Skills -- Gaining Information, Problem solving.

Objective: "Students will be able to describe how maple syrup is made."[8, p. 90]

The first page of this activity simply describes the equipment needed and how to "tap" a maple tree. The second page has the students record the amount of time and sap required to make the syrup. After the syrup is made there are some questions for discussion: "How much energy was consumed to produce the syrup?" "How many calories were used to produce the syrup?" "How many calories are in the syrup?" "What is the net energy gained or lost?" "How did the sugar get in the sap?"[8, p. 91]

The Extension has the sap boil past the point of syrup and on to maple sugar. It also suggests tapping other trees, and making syrup from that sap and comparing it with maple syrup -- except not by tasting. (How frustrating!)

Nowhere in this activity are students required to "...describe how maple syrup is made." The primary PLT/CPT Principle states that it "...focuses on the development of knowledge and skills for intelligent prediction and evaluation of the impact of specific management policies on the forest and its interrelated communities," but none of the major components in this description take place in the activity.[8, p. viii]

There are two secondary Principles listed -- Lifestyles and Diversity of Forest Roles. The "concepts" are:[8, p. 160, 164, 167]

5.21 -- "The renewable resource base can be extended by research and development, improved conservation practices and management." (This one has been discussed before, and I am not sure how research, conservation or management tie into this activity either.)

2.112 -- "The forest environment is the source of many raw materials and gene pools of potential value and energy." (No argument from me on this statement. The activity certainly used the raw material, but the gene pool issue and value are not mentioned. Energy is mentioned but does the "concept" statement on energy relate to the calorie count happening in the activity?)

7.31 -- "Modest changes in consumer preferences and practices can markedly affect the impact of the home and family on the forest environment." (Aside from being a poorly written statement, this "concept" makes a big assumption -- what would happen if everyone preferred maple syrup because it's more natural. Of course that would affect the forest, but once again, that does not seem to be the focus of the activity -- using math to figure out calories is the focus.)

Personal Favorites

I know the editors may cut this category, but I am willing to take the chance to briefly describe two of my favorite activities in the Guidebooks.

In the K-6 Guidebook my favorite is #58 -- "Water You Know?"[8, p. 94] In my edition of the K-6 Guidebook, it is the only activity listed under one PLT/CPT Principle, Management and Interdependence of Natural Resources, with a different primary Principle, Life-support Systems.

The objective of #58 is to have students describe the importance of water to living things. It alleges that students in grades K-6 can learn eight "concepts": 6.11 -- Finite Matter, 6.3 -- Interdependence of Living Things and Their Environment, 6.31 -- Human-Biosphere Relations, 6.4 -- Biological Needs, 6.41 -- Dependency on Environment, 6.42 -- Carrying Capacity, 6.421 -- Limiting Factors in Environments, 7.12 -- Determination of Resources and Their Values.

What is the actual activity? A variation (not to be confused with the PLT/CPT Variation) on the game charades. Students act out certain scenes that show interactions between water, plants and animals -- "Making a thirsty animal happy," "A rainy day at school," "What happens when you water a plant?" etc. Afterwards the audience describes how the scene showed the importance of water and a class discussion takes place after all the scenes are completed.

The suggested subject areas are Science, and Social Studies. Why isn't Fine Arts or Language Arts and Humanities also included? Most important, can this activity really teach eight fairly complicated concepts using this learning method? I sincerely have my doubts, even though the acting might be fun.

My other favorite is in the 7-12 Guidebook, *#66* -- "A Treasure Hunt... for Energy."[9, p. 135-8] The objective is to identify current sources of energy for heating, electricity and transportation, to evaluate how appropriate this source is over time and to suggest both new and better sources to help meet energy demand. (Conservation as an energy source is not mentioned in the activity but is in the Extension and Variation.)

The primary PLT/CPT Principle is Life-Support Systems. The activity is for grades 7-12 and the subjects are Science and Social Studies. The assignment is to "Map the energy in your community...," determine how much of the energy is renewable and how much is non-renewable, and

predict how long the energy supplies will last at the current rate of use. With this information, a "ranging discussion" can take place over the possibilities of renewable or non-renewable fuels in our society.

The Extension uses guided imagery to help invent new energy resources, has the students generate a list of things they can do to be more energy efficient and carry out that plan for one week, and look at the long-range personal economic effects of the changes on a long-term basis. The Variation consists of reading a government energy report, brainstorming new ways to produce and use energy, and try to imagine the kinds of energy available in 40-50 years.

What is so incredible about this 1/2 page of activity, 1/2 page of Extension, and 1 1/2 pages of Variation is how many "concepts" the activity claims to present -- a PLT/CPT high of 24. I will leave it up to the reader to read the details on the 24, but this is a brief sampling: 6.1 -- Dynamic Biological Systems, 6.1121 -- Energy Flow, 5.3 -- Urban-Forest Interdependence, 4.44 -- Stewards vs. Owners of Resources, 7.1 -- Culture as Learned Behavior, 7.4 -- Creative Expression and the Environment.

This one simply left me speechless.

General Tendencies

Please keep in mind that, as alluded to above, all of this says nothing about whether or not an activity is good in other respects (e.g., motivating the learners, fitting into what they already understand, giving them something to do with what they've done, etc.), nor even if its objective and principles are actually worthwhile. The truth is many of these activities fail for numerous other reasons. I have evaluated them here only on the outcomes the authors claim for them.

1. PLT/CPT has a problem using and defining words. The program/supplemental confusion is pervasive. The American Paper Institute, National Forest Products Association, The American Forestry Council and the American Forest Foundation all refer to PLT/CPT as "an environmental education program"[15, p. 6; 17, p. 1; 18, p. 17; 23] and brochures distributed in Vermont, Arizona and by the national headquarters describe the project as an "...award winning program."[25; 26; 27] Later in the same brochures they describe PLT/CPT as supplemental material. The front of the Guidebooks clearly state, "Supplementary Activity Guide..." while the preface states "the activities may be used as the basis for a course of study, but are more likely to be used to supplement existing curricula."[8, p. ii] The Introduction by Rudolph Shafer of WREEC does not mention the supple-

mental aspect of the project but does allude to it as an environmental education program twice. PLT/CPT is not an environmental education program -- it is supplemental.[6, p. v-vi]

I have already referred to the definitions of principle, concept, skills, and environmental awareness in the activity guides. Other interesting definitions in the glossary were: community, North, South, East, West (all referring to states), visitor day, and many others.

2. Manipulative discussion is used a great deal to make the activity work or to meet the activity objective. Learning is most effective by doing, and PLT/CPT does not incorporate this learning style effectively. In each of the Activity Guidebooks, 51 activities include discussion. That's a total of 102 out of 177.

3. Many of the activities ask the students to "identify" or "demonstrate" as part of the objective. However, nowhere in the activity do they actually have to demonstrate or identify -- except in discussion. Activities #56 and #63 in the K-6 Guidebook are good examples.

4. As mentioned earlier, there are frequent problems with how the subjects are listed. Some are listed inappropriately and some are not listed in one activity, when a similar activity does list them. The K-6 Guidebook alone contained 36 of these instances.

5. For many of these activities any subject could be used to teach the objective. These was nothing unique about trees or the forest or the natural world. It was almost as if they were just thrown in because of who sponsored the project -- the forest products industry.

6. Some of the activities came in "waves" or seemed to repeat themselves. There was a series on colors, another on pioneer and Native American life, some on open space in urban areas, several dealing with citizen input and government agencies, etc. Sometimes they were grouped together and other times they were scattered throughout the PLT/CPT Principles.

7. Subtle, and not so subtle, messages permeate this material. Throughout the guidebooks the forest is viewed as a resource needing management to satisfy the needs of the consumer. More emphasis is given to the industry finding solutions than to individuals making changes in their lifestyles. There is less emphasis on the finiteness of the resources and more on how we can adequately allocate them.

Activity *#52* in the 7-12 Guidebook included a not so subtle message. In it students had to debate between spraying DDT to control for a pest and the effect the spraying would have on the fishing industry in the area. Even in 1975, I cannot believe that anyone would even suggest the use of DDT. It is unconscionable that anyone would put that thought into the minds of learners -- that there are times when it is okay to introduce such a dangerous chemical into our ecosystem -- again! It is bad enough that it is still returning to us in the food (and trees and paper) we import from other countries where U.S. and other industrialized countries still make it available.

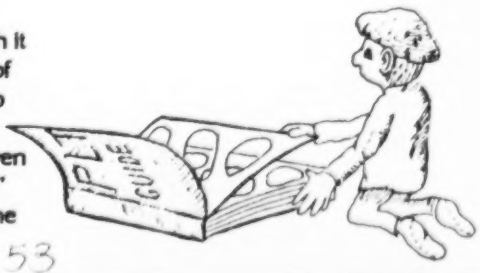
8. Finally, relying on the index of information in the back of the guidebooks can be risky. I took a close look at one topic -- Energy -- in the 7-12 Guidebook and received quite a shock.

There are a total of 32 Energy activities listed under this topic, but only three of these activities, *#6, #62* and *#66*, listed energy as one of the concepts being taught! Thirteen other activities dealt with energy in the activity, or at least mentioned the word energy, but did not list it as a concept. *(10, 49, 51, 64, 65, 70, 71, 77, 79, 81, 82, 85, 88)*

Incredible as it may seem, 16 activities listed under the topic did not have to do with energy, energy flow or even mention the word energy in the activity text. *(9, 11, 16, 17, 21, 30, 31, 48, 53, 55, 67, 72, 74, 75, 80, 86)*

One of the activities, *#71* seemed to be a fairly good energy flow activity but energy was not mentioned in the objective or the "concept" section on the activity page. Another activity, *#79*, mentioned energy use as part of the objective of the activity, but energy was not listed as a concept to be learned or taught.

Once again, I suspect all of this confusion results from having different folks work on different parts of a project like this at different times and then having someone try to stitch it all together. Clearly, most of the PLT/CPT activities fail to meet the promise of the Principle statements and even the more positive "concept" statements in the back of the guidebooks.



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Is PLT/CPT Effective?

"Effective: "producing a definite or desired result."

-- Webster's 20th Century Unabridged Dictionary, 1977

What are the desired results of the PLT/CPT materials? From my reading of the Preface it is to help people understand how they affect, and are affected by, natural resources, and the interdependence between living and non-living things. Certainly natural resources are a major topic throughout the guidebooks, but the emphasis on interdependence is a minor one at best.

The Introduction provides further insight into the "effectiveness" of PLT/CPT:[8, p. v-vi]

1) Has this project met its "simple charge" to help "...students understand their interdependence with the total forest community..." as it claimed? No, there are not enough activities either in or about a forest, or on the concept of interdependence for this project to be effective.

2) Has PLT/CPT provided, "The most effective environmental education... "by emphasizing student interaction with the natural world and social environment? Only 58 of the 177 activities utilize the natural world. My review found that a number of the activities emphasized primarily the "social environment," or human interrelationships. (And only 12 dealt directly with biological interrelationships.)

3) Has PLT/CPT promoted "...reuse, recycling... energy efficient products, and the use of forest practices which minimize environmental damage" as described in the Introduction? Slightly on the former and no on the latter. Only a handful of the 177 activities actually focus on reuse, recycling and energy efficient products. (The guidebooks are not printed on recycled paper.) As for environmental damage, leasing of public forest land in this country is at its highest rate ever; companies are putting extreme political pressure on elected officials and government agencies to continue cutting the world's last temperate rainforest and the latest analysis of satellite photographs indicate annual tropical forest destruction at twice the previous estimate of 40 million acres.[24, p. 4; 42; 53; 71]

Is it unfair to expect PLT/CPT to solve all of these environmental problems? You bet it is! All of us as individuals, and especially those of us in

environmental education for the past 20 years must share the blame. However, with such a direct focus on the forest, with claims of thousands of workshop participants touching the lives of millions of students and with a survey showing 90% of PLT/CPT workshop participants using at least one activity, I would have hoped for more positive news to report on the state of the earth's forests.

"We are stubborn because we have been living in this area for so long, and our heart tells us that this is our land. We are not afraid of going to jail because we know that if the logging continues we are going to die anyway. Tell the timber companies to stop. This is what we want. Only then will we be happy." -- Chief Along Sega, Penan leader, Borneo, Malaysia

I think there are several reasons why the PLT/CPT materials have not been more effective as learning tools.

To quote the PLT/CPT Introduction, "...everyone talks about interdisciplinary environmental education programs which involve a wide community of interests, but hardly anyone ever produces them. Project Learning Tree represents an honest effort to transform this elusive ideal into reality."[6, p. v] Thank you for the effort, but I'm afraid it has failed. And it is not just PLT/CPT that has failed in the interdisciplinary/infusion approach, it is Project WILD/Project Tame and all the other "projects" that, in reality have not made a significant impact on the health of the planet and have not made a difference in our classrooms.

I have taught in two very different school districts in Arizona -- one small and rural, the other large and urban. Both have had workshops in PLT/CPT (and Project WILD/Project Tame) offered numerous times and taken by many teachers. Yet I do not see the infusion of these supplemental activities taking place. I do see teachers who are concerned about the planet making environmental topics a part of their curriculum and modeling good environmental behaviors for their students. Unfortunately, that has little to do with PLT/CPT.

Research reported in the summer 1989 issue of the Journal of Environmental Education concurs with my subjective insights. In that study of teachers from western Idaho and eastern Washington, most of those surveyed did not include environmental education in their curriculum unless they taught Science. Social Studies was the only other content area utilizing environmental education to any great extent. Most of the

others shied away from it.[74]

Make no mistake, I am a firm believer in infusion, but not in the school curriculum. Good environmental practices should be infused into our daily lives. Environmental education is too important a topic to be left to a chance lesson here or there during the school day. This philosophy toward environmental education is one of the major differences between the interdisciplinary/infusion folks and the programmatic approach of earth education. Simply put, during the past 20 years there have been thousands of workshops conducted, millions of dollars spent and still the infusion model has not gotten the job done. Perhaps it's time to try another approach, i.e. good, solid, focused, sequential programs that excite learners and help them grasp how life works on earth and what they can do to lessen their personal impact on those systems.

Another ineffectiveness factor is that most of the activities are just not very exciting. Many are revisions of activities used in other situations, now slotted into a PLT/CPT Principle and spiced up with words like "tree" and "forest." As stated in the previous section, many of the activities just do not get the job done. Once again, this is not just my opinion.

An "Evaluation Summary Report" prepared by The Bureau of School Service and Research of the University of Washington in 1977 and submitted to the American Forest Institute and WREEC came to some interesting conclusions:[83, p. 2-4]

1) *PLT/CPT had the greatest impact on intermediate (grades 7-9) students. The learning of the specific material in the lessons showed the strongest gains over the control group. Generalized questions about the PLT/CPT Principles produced less strong results.* (Keep in mind that the heart of the project's claim to be environmental education has to be based on these Principles.)

2) *At the elementary level (grades 4-6) the overall lessons subtest indicated a significantly higher score over the control group. However, the control group actually scored higher than the test group when it came to questions about the PLT/CPT Principles and in one of three specific lesson subtests.* (I also found this to be the weakest connection in the materials.)

3) *At the high school level (grades 10-12) there were no significant differences in the overall or subtest scores between the control and the test group.* (PLT/CPT was simply not effective with older students.)

4) *Conclusion: "In sum, the student impact of the PLT materials are fairly substantial, especially at the intermediate grade levels. The major effect seems to be the transmission of specific information, but ancillary changes in both the understanding of basic principles and opinions seems to be possible. A number of puzzling results are found such as reversals of two effects at the elementary school years which deserve further inquiry...."* (A very positive way of saying the materials do not make a difference in several educational settings.)

Finally, I find too much of the status quo mentality in the activities and not enough of the struggle and change needed to really have an impact on the planet for this project to be effective. As I mentioned near the beginning of this review, PLT/CPT claims it doesn't want teachers indoctrinating students with a "correct" opinion, because "...in most human activities there are no right and wrong answers -- only wise and intelligent choices." These are powerful words but the powerful actions needed to help students make those "wise and intelligent choices" are not provided by the PLT/CPT activities.

Mike Mayer
Tucson, Arizona

(Please note: The Institute for Earth Education does not believe that all corporate attempts to get across an industry viewpoint are inherently bad, and we are confident that there are people involved in both the timber companies and the USFS who are environmentally concerned and want to contribute to a serious educational response to our problems. However, we fear that Project Learning Tree's origins and funds are often overlooked, and it's underlaying messages obscured, because of all the cheering it has received as an "environmental education" program. The institute believes that Mike has raised some concerns that need to be addressed not only by the users of the material, but by the education profession that has so unquestioningly supported the project.)

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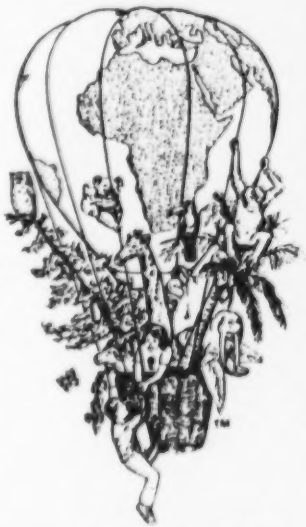

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